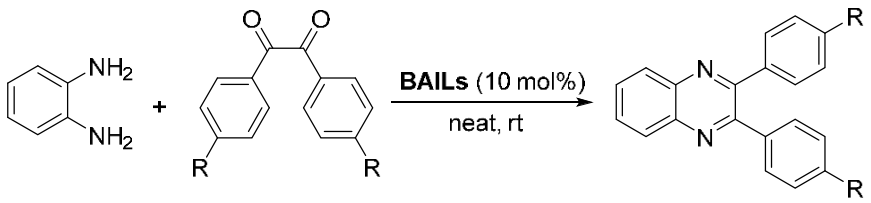
DR-34

SYNTHESIS OF QUINOXALINE DERIVATIVES CATALYZED BY BRØNSTED ACIDIC IONIC LIQUID UNDER SOLVENT-FREE CONDITIONS

Sachinta Mahato,[1] Rana Chatterjee,[1] Anindita Mukherjee,[2] Grigory V. Zyryanov,[2,3] Adinath Majee[1]

[1]Department of Chemistry; Visva-Bharati (A Central University), Santiniketan 731235, India.
[2]Ural Federal University, 19 Mira St., Yekaterinburg-620002, Russia.
[3]Ya. Postovsky Institute of Organic Synthesis UB RAS, S. Kovalevskoy / Akademicheskaya St., 20/22, Yekaterinburg, 620990, Russia. E-mail: sachinto123@gmail.com

Abstract. Brønsted acidic ionic liquid (BAIL) 1-Butane sulfonic acid-3 methylimidazolium tosylate, [BSMIM]OTs, are well known as useful and green catalyst for many organic transformations. The applicability of BAILs is extended in various fields of synthetic process as it has some unique type of activities. Considering these, we have employed it for the synthesis of Quinoxaline derivatives which have been used in the pharmaceutical industry and show important biological activities such as antibacterial, anti-inflammatory, antiviral, and anticancer activity.[1] In addition, they are widely applicable as dyes, efficient electroluminescent materials, and organic semiconductors, building blocks for the synthesis of anion receptor, cavitands, dehydroannulenes and so on.[2] From many years, a number of synthetic method have been developed for the synthesis of Quinoxaline derivatives using various reagents.[3] Herein we are pleased to report a synthetic protocol for the preparation of Quinoxaline derivatives using [BSMIM]OTs ILs under mild and solvent free conditions (Scheme 1).



Scheme 1. Synthesis of quinoxaline derivatives using [BSMIM]OTs ILs

References

1. Synthesis and biological activity of new quinoxaline antibiotics of echinomycin analogues / Y. B Kim, Y. H. Kim, J. K. Park, S. K. Kim // Bioorg. Med. Chem. Lett. – 2004. – Vol. 14. – P. 541– 544.
2. Synthesis and device characterisation of side-chain polymer electron transport materials for organic semiconductor applications / S. Dailey, J. W. Feast, R. J. Peace, R. C. Saga, S. Till, E. L. Wood // J. Mater. Chem. – 2001. – Vol. 11. – P. 2238–2243.
3. Propylsulfonic acid functionalized nanozeolite clinoptilolite as heterogeneous catalyst for the synthesis of quinoxaline derivatives / S.M. Baghbanian // Chin. Chem. Lett. – 2015. – Vol. 26. – P. 1113-1116.

This work was funded by Russian Science Foundation (Ref. No. 18-73-00301).